

REMARKS

Claims 1-8 and 11-13 are currently pending in this application. Applicants respectfully request reconsideration of the application based on the following remarks.

Applicants Response to 35 U.S.C. §103 (a) Rejection over Aldrich in view of Bollinger

Claims 1-7 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 4,517,205 to Aldrich et al. (hereinafter “Aldrich”) in view of “Comparison of Precrystallization of Chocolate” to Bollinger (hereinafter “Bollinger”). Applicants respectfully traverse this rejection and request reconsideration on the basis that the combination of references fails to render the claims obvious.

The Examiner acknowledges that Aldrich does not address shear, but alleges that:

Bollinger discloses subjecting chocolate to a high shear of 500 1/s in a narrow annular gap prior to molding the chocolate. It would have been obvious to one having ordinary skill in the art at the time of the invention to adjust the sheer experience by the chocolate composition in the depositor of Aldrich to a high sheer level as the 500 1/s disclosed in Bollinger, as the process of Bollinger results in a chocolate which has a low viscosity and good flow properties and excellent bloom resistance.

(Office Action, at pages 3-4).

The present application relates to the preparation of centre-filled confectionery articles using one-shot moulding. In particular, the present invention involves a process in which the centre-fill material and the casting material are co-deposited, i.e. deposited simultaneously. As discussed in the introduction of the application, prior art processes encounter problems because a high temperature is required for the candy to flow, but this high temperature has adverse effects on the chocolate composition. (Instant specification, page 1). One of skill in the art would not

normally heat chocolate beyond 50-60°C because heating above this temperature range is known to impair its flavor.

As stated in claim 1, a liquid candy composition and chocolate composition are co-deposited with chocolate being a lower temperature than the liquid candy. The presence of the hot liquid candy adjacent to the chocolate causes the chocolate to heat up. Without application of the high shear, the chocolate becomes viscous and may solidify and block the apparatus. The application of the high shear to the overheated chocolate increases the critical temperature at which the chocolate becomes viscous and unworkable. Prior to the present invention, it was not possible to reliably prepare one-shot chocolate/candy articles.

Contrary to the Examiner's assertions, it would not be obvious to one of skill in the art at the time the invention was made to adjust the shear generated by the nozzle in order to produce chocolate with the flow properties desired. Aldrich discloses a one-shot process and mentions chocolate as a suitable soft core. Applicants respectfully submit that the Aldrich process would not apply a shear of at least 100s^{-1} . To evidence this, Applicants enclose a training presentation from the Bühler company, a major manufacturer of one-shot depositor apparatus, dated September 29, 2004. (See Exhibit A) The presentation explains how numerical simulations and viscosity data can be employed to model the one-shot process and states "Most important for process is flow behavior in the low shear rate domain, i.e. $<50\text{ 1/s}$ " (See Exhibit A, page 8, slide 27). Accordingly, the presentation teaches that shear rates of less than 50s^{-1} should be employed to maintain flow behavior, and therefore actively teaches against employing shear rates of at least 100s^{-1} .

Aldrich is directed to a method for preparing co-deposited, two-component hard candy having a hard candy shell portion and core portion that may be soft. Aldrich states that the core may be milk-based and mentions chocolate. However, nowhere in Aldrich are examples employing chocolate disclosed or suggested. In contrast, one example describes a shell composition that is maintained at about 290°F (143°C) and a core composition that is held at

about 100°F (37°C). If one of skill in the art were to employ chocolate in place of the soft candy core, the process would not be effective. The chocolate would be heated toward 290°F, become too viscous and thus block the equipment. This problem was addressed and overcome by the inventors in the present invention.

As Aldrich does not recognize the difficulties associated with co-depositing candy and chocolate, one of skill in the art would not look to Aldrich in an attempt to modify the process.

Bolliger does not demonstrate that the Aldrich process also results in the same high shear since a different apparatus is being employed. Moreover, the apparatus disclosed in both Aldrich has a different structure from the apparatus disclosed by Bolliger. As explained in the Bühler presentation, the one-shot process employs a shear rate of less than 50s^{-1} .

Bollinger is directed to a new high shear crystallizer apparatus in which the chocolate is subjected to a high shear of up to 500s^{-1} in a narrow annular gap. (See Bolliger, page 284). Table 4 of Bollinger shows a flow chart where the chocolate is tempered in the apparatus and then molded. Contrary to the Examiner's assertion, it would not be obvious to adjust the shear level in Aldrich to that disclosed in Bollinger simply because Bollinger states that well tempered chocolate has good properties, such as, gloss, mould release and bloom resistance.

Bollinger recommends the application of high shear to temper the chocolate and improve its properties. However, the high shear is not applied at high temperatures. In contrast, as shown in Figure 2, the apparatus includes a cooling jacket. Table 2 then lists the temperature at which the chocolate is when it enters and exits the crystallizer. Since the chocolate is at standard processing temperature, and below the critical temperature of chocolate, it will not suffer from high viscosity. The high shear is thus not being employed to increase the critical temperature of the chocolate.

There is no apparent reason why one of skill in the art would combine the elements at issue in the fashion claimed by the present invention. Based on the teachings thereof, if one of skill in the art were to combine Aldrich and Bollinger, they would transfer the Bollinger tempered chocolate to the Aldrich one-shot depositor and the chocolate would not be subject to the high shear in the depositor immediately prior to being introduced into the mould as required by claim 1.

As such, Applicants respectfully submit that independent claim 1, and any claims that depend therefrom, are patentable over Aldrich and Franke, each taken alone or in combination. Reconsideration and withdrawal of the 35 U.S.C. §103 rejection based on this combination is respectfully requested.

Applicants' Response to 35 U.S.C. §103 (a) Rejection over Aldrich in view of Bollinger and Franke

Claim 8 is rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Aldrich in view of Bollinger and DE 19503635 to Franke (hereinafter "Franke"). Applicants respectfully traverse this rejection and request reconsideration on the basis that the combination of references fails to render the claim obvious.

The Examiner acknowledges that Aldrich and Bollinger fail to disclose adding fat to the chocolate composition prior to deposition in the molds, but alleges that:

Franke discloses production of chocolate compositions wherein liquid cocoa butter (fat) is added in an amount to comprise 4-15% of the chocolate mass. It would have been obvious to one having ordinary skill in the art at the time of the invention to modify the method of Aldrich and Bollinger with the addition of fat as disclosed by Franke, because adding fat to the chocolate mixture transforms the chocolate from a pasty mixture to one that is pumpable. This addition of fat would occur before the step of depositing in mold.

(Office Action at page 5) (citations omitted).

Claim 8 requires that additional fat is added to the chocolate composition. Franke describes a method of conching chocolate, which involves the application of high shear. Franke does not relate to one-shot processing and does not suggest that additional fat should be added to the chocolate to improve one-shot processing. Hence, even if the skilled person were to combine the teachings of Aldrich, Bollinger and Franke, the invention of claim 8 would not result.

As stated in detail above, the combination of Aldrich and Bollinger fails to render the claims obvious. Franke was merely cited for the disclosure of a fat and adds nothing of relevance to Aldrich or Bollinger in this regard. As such, there is no apparent reason why one of skill in the art would combine the elements at issue in the fashion claimed by the present invention. As such, Applicants respectfully submit that independent claim 1, and any claims that depend therefrom, are patentable over Aldrich, Bollinger and Franke, each taken alone or in combination. Reconsideration and withdrawal of the 35 U.S.C. §103 rejection based on this combination is respectfully requested.

Applicants' Response to 35 U.S.C. §103 (a) Rejection over Aldrich in view of Bollinger and Cully

Claims 11-13 are rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over Aldrich in view of Bollinger and WO Publication 96/39045 to Cully (hereinafter "Cully"). Applicants respectfully traverse this rejection and request reconsideration on the basis that the combination of references fails to render the claims obvious.

The Examiner alleges that:

Cully discloses a method for processing chocolate which includes subjecting the chocolate to high shear prior to molding it. It would have been obvious to one having ordinary skill in the art at the time of the invention to combine the method of Aldrich and Bollinger, with the application of pre-shear as disclosed by Cully,

because subjecting the chocolate to pre-shear reduces the viscosity of the chocolate, resulting in improved smoothness.

(Office Action, at page 6) (citations omitted).

Claims 11-13 include the additional limitation that the chocolate composition is subjected to a pre-shear prior to step 3, as well as the subsequent high shear of at least 100s^{-1} i.e. a two step process. The application of pre-shear and shear in the depositor is that it reduces the viscosity of the chocolate. This was found to be extremely beneficial to the process and previously unknown and unaddressed in the prior art.

Cully describes a method for reducing the viscosity of melted chocolate by applying a high shear. Cully does not relate to a one-shot process and there is no motivation for the skilled person to combine its teaching with Aldrich or Bolliger. Furthermore, since Aldrich does not disclose a high shear step of at least 100s^{-1} , the invention of claims 11 to 13 would not result even if Aldrich, Bolliger and Cully were combined.

As stated in detail above, the combination of Aldrich and Bollinger fails to render the claims obvious. Cully was merely cited for the disclosure of subjecting the chocolate to high shear and adds nothing of relevance to Aldrich or Bollinger in this regard.

As such, there is no apparent reason why one of skill in the art would combine the elements at issue in the fashion claimed by the present invention. As such, Applicants respectfully submit that independent claim 1, and any claims that depend therefrom, are patentable over Aldrich, Bollinger and Cully, each taken alone or in combination. Reconsideration and withdrawal of the 35 U.S.C. §103 rejection based on this combination is respectfully requested.

This application is believed to be in condition for examination. Favorable action thereon is therefore respectfully solicited.

Application No.: 10/533,101
Response dated April 23, 2010
In Reply to Office Action of January 28, 2010
Docket No.: 1307-5 PCT/US
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Should the Examiner have any questions or comments concerning the above, the Examiner is respectfully invited to contact the undersigned at the telephone number given below.

The Commissioner is hereby authorized to charge payment of any additional fees associated with this communication, or credit any overpayment, to Deposit Account No. 08-2461. Such authorization includes authorization to charge fees for extensions of time, if any, under 37 C.F.R. § 1.17 and also should be treated as a constructive petition for an extension of time in this reply or any future reply pursuant to 37 C.F.R. § 1.136.

Respectfully submitted,

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